

LSF-SMT 3.81/10/135 1.5SN BK RL

Weidmüller Interfaces GmbH & Co. KG

Postfach 3030

32760 Detmold

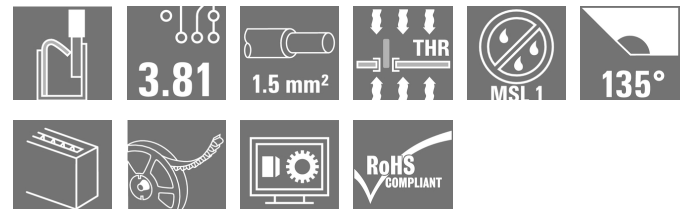
Tel. +49 5231 14-0

Fax. +49 5231 14-2083

info@weidmueller.com

www.weidmueller.com

Product image



Similar to illustration

PCB terminal for fully automatic assembly in reflow soldering (SMT), with PUSH IN conductor connection system. Conductor inserted and slider operated in same direction (TOP). Packed in box or as tape on reel. Pin lengths optimised at 1.5 mm or 3.5 mm.

General ordering data

Version	Printed circuit board terminals, 3.81 mm, Number of poles: 10, 135°, Solder pin length (l): 1.5 mm, black, PUSH IN with actuator, Clamping range, max.: 1.5 mm², Tape
Order No.	1888530000
Type	LSF-SMT 3.81/10/135 1.5SN BK RL
GTIN (EAN)	4032248494675
Qty.	190 pc(s).
Product data	IEC: 320 V / 17.5 A / 0.2 - 1.5 mm² UL: 300 V / 12 A / AWG 28 - AWG 14
Packaging	Tape

LSF-SMT 3.81/10/135 1.5SN BK RL

Weidmüller Interfaces GmbH & Co. KG

Postfach 3030

32760 Detmold

Tel. +49 5231 14-0

Fax. +49 5231 14-2083

info@weidmueller.com

www.weidmueller.com

Technical data

Dimensions and weights

Depth	12.7 mm	Depth (inches)	0.5 inch
Height	14.4 mm	Height (inches)	0.567 inch
Height of lowest version	12.9 mm	Width	38.49 mm
Width (inches)	1.515 inch	Net weight	10.695 g

Temperatures

Continuous operating temp., max.	120 °C
----------------------------------	--------

System parameters

Product family	OMNIMATE Signal - series LSF	Wire connection method	PUSH IN with actuator
Mounting onto the PCB	THT/THR solder connection	Conductor outlet direction	135°
Pitch in mm (P)	3.81 mm	Pitch in inches (P)	0.15 inch
Number of poles	10	Pin series quantity	1
Fitted by customer	No	Solder pin length (l)	1.5 mm
Solder pin length tolerance	+0.1 / -0.3 mm	Solder pin dimensions	0.35 x 0.8 mm
Solder pin dimensions = d tolerance	0 / -0.1 mm	Solder eyelet hole diameter (D)	1.1 mm
Solder eyelet hole diameter tolerance (D)	+ 0,1 mm	Number of solder pins per pole	2
Stripping length	8 mm	L1 in mm	34.29 mm
L1 in inches	1.35 inch	Touch-safe protection acc. to DIN VDE 0470	IP 20
Touch-safe protection acc. to DIN VDE 57 106	Safe from finger touch	Protection degree	IP20
Volume resistance	1.60 mΩ		

Material data

Insulating material	LCP GF	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	IIIa
Comparative Tracking Index (CTI)	≥ 175	Moisture Level (MSL)	1
UL 94 flammability rating	V-0	Contact material	Copper alloy
Layer structure of solder connection	4...6 µm Sn matt	Storage temperature, min.	-40 °C
Storage temperature, max.	70 °C	Operating temperature, min.	-50 °C
Operating temperature, max.	120 °C	Temperature range, installation, min.	-30 °C
Temperature range, installation, max.	120 °C		

Conductors suitable for connection

Clamping range, min.	0.13 mm ²
Clamping range, max.	1.5 mm ²
Wire connection cross section AWG, min.	AWG 28
Wire connection cross section AWG, max.	AWG 14
Solid, min. H05(07) V-U	0.2 mm ²
Solid, max. H05(07) V-U	1.5 mm ²
Flexible, min. H05(07) V-K	0.2 mm ²
Flexible, max. H05(07) V-K	1.5 mm ²
w. plastic collar ferrule, DIN 46228 pt 4, 0.25 mm ² min.	
w. plastic collar ferrule, DIN 46228 pt 4, 0.75 mm ² max.	

LSF-SMT 3.81/10/135 1.5SN BK RL

Weidmüller Interfaces GmbH & Co. KG

Postfach 3030

32760 Detmold

Tel. +49 5231 14-0

Fax. +49 5231 14-2083

info@weidmueller.com

www.weidmueller.com

Technical data

w. wire end ferrule, DIN 46228 pt 1, min. 0.25 mm²w. wire end ferrule, DIN 46228 pt 1, max. 1.5 mm²

Clampable conductor

Cross-section for conductor connection

Type fine-wired

nominal 0.25 mm²

wire end ferrule

Stripping length nominal 10 mm

Recommended wire-end ferrule [H0.25/12 HBL](#)

Cross-section for conductor connection

Type fine-wired

nominal 0.34 mm²

wire end ferrule

Stripping length nominal 10 mm

Recommended wire-end ferrule [H0.34/12 TK](#)

Cross-section for conductor connection

Type fine-wired

nominal 0.5 mm²

wire end ferrule

Stripping length nominal 10 mm

Recommended wire-end ferrule [H0.5/14 OR](#)

Cross-section for conductor connection

Type fine-wired

nominal 0.75 mm²

wire end ferrule

Stripping length nominal 10 mm

Recommended wire-end ferrule [H0.75/14T HBL](#)

Reference text

Length of ferrules is to be chosen depending on the product and the rated voltage. The outside diameter of the plastic collar should not be larger than the pitch (P)

Rated data acc. to IEC

tested acc. to standard

IEC 60664-1, IEC 61984

Rated current, max. number of poles (Tu=20°C)

16 A

Rated current, max. number of poles (Tu=40°C)

14 A

Rated voltage for surge voltage class / pollution degree III/2

160 V

Rated impulse voltage for surge voltage class/ pollution degree II/2

2.5 kV

Rated impulse voltage for surge voltage class/ contamination degree III/3

2.5 kV

Rated current, min. number of poles (Tu=20°C)

17.5 A

Rated current, min. number of poles (Tu=40°C)

17.5 A

Rated voltage for surge voltage class / pollution degree II/2

320 V

Rated voltage for surge voltage class / pollution degree III/3

160 V

Rated impulse voltage for surge voltage class/ pollution degree III/2

2.5 kV

Short-time withstand current resistance

3 x 1s with 80 A

Rated data acc. to CSA

Institute (CSA)



Certificate No. (CSA)

200039-1664286

Rated voltage (Use group B / CSA)

300 V

Rated current (Use group B / CSA)

10 A

Wire cross-section, AWG, min.

AWG 28

Reference to approval values

Specifications are maximum values, details - see approval certificate.

Rated voltage (Use group D / CSA)

300 V

Rated current (Use group D / CSA)

10 A

Wire cross-section, AWG, max.

AWG 14

LSF-SMT 3.81/10/135 1.5SN BK RL

Weidmüller Interfaces GmbH & Co. KG

Postfach 3030

32760 Detmold

Tel. +49 5231 14-0

Fax. +49 5231 14-2083

info@weidmueller.com

Technical data

Rated data acc. to UL 1059

Institute (cURus)



Certificate No. (cURus) www.weidmueller.com

E60693

Rated voltage (Use group B / UL 1059) 300 V

Rated current (Use group B / UL 1059) 12 A

Wire cross-section, AWG, min. AWG 28

Reference to approval values Specifications are maximum values, details - see approval certificate.

Rated voltage (Use group D / UL 1059) 300 V

Rated current (Use group D / UL 1059) 10 A

Wire cross-section, AWG, max. AWG 14

Packing

Packaging	Tape	VPE length	155 mm
VPE width	64 mm	VPE height	38 mm
Tape depth (T2)	17.5 mm	Tape width (W)	56 mm
Tape pocket depth (K0)	17 mm	Tape pocket height (A0)	12.8 mm
Tape pocket width (B0)	38.79 mm	Tape pocket separation (P1)	20 mm
Tape hole separation (E)	1.75 mm	Tape pocket separation (F)	26.2 mm
Tape reel diameter Ø (A)	330 mm	Surface resistance	$R_s = 10^9 - 10^{12} \Omega$

Classifications

ETIM 6.0	EC002643	ETIM 7.0	EC002643
ETIM 8.0	EC002643	ECLASS 9.0	27-44-04-01
ECLASS 9.1	27-44-04-01	ECLASS 10.0	27-44-04-01
ECLASS 11.0	27-46-01-01	ECLASS 12.0	27-46-01-01

Important note

IPC conformity Conformity: The products are developed, manufactured and delivered according international recognized standards and norms and comply with the assured properties in the data sheet resp. fulfill decorative properties in accordance with IPC-A-610 "Class 2". Further claims on the products can be evaluated on request.

Notes

- Additional push button colours on request
- Operating force of slider max. 40 N
- Rated current related to rated cross-section & min. No. of poles.
- Wire end ferrule with plastic collar to DIN 46228/4
- Wire end ferrule without plastic collar to DIN 46228/1
- P on drawing = pitch
- Rated data refer only to the component itself. Clearance and creepage distances to other components are to be designed in accordance with the relevant application standards.
- Crimping shape "A" for wire end ferrules with PZ 6/5 crimping tool recommended.
- Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months

LSF-SMT 3.81/10/135 1.5SN BK RL**Weidmüller Interfaces GmbH & Co. KG**

Postfach 3030

32760 Detmold

Tel. +49 5231 14-0

Fax. +49 5231 14-2083

info@weidmueller.comwww.weidmueller.com**Technical data****Approvals**

Approvals



ROHS Conform

UL File Number Search UL Website

Certificate No. (cURus) E60693

DownloadsApproval/Certificate/Document of Conformity [Declaration of the Manufacturer](#)Engineering Data [CAD data – STEP](#)Engineering Data [EPLAN, WSCAD](#)Catalogues [Catalogues in PDF-format](#)

Brochures

- [FL DRIVES EN](#)
- [FL ANALO.SIGN.CONV. EN](#)
- [MB SMT EN](#)
- [FL DRIVES DE](#)
- [MB DEVICE MANUF. EN](#)
- [FL BUILDING SAFETY EN](#)
- [FL APPL LED LIGHTING EN](#)
- [FL INDUSTR.CONTROLS EN](#)
- [FL MACHINE SAFETY EN](#)
- [FL HEATING ELECTR EN](#)
- [FL APPL INVERTER EN](#)
- [FL_BASE_STATION_EN](#)
- [FL ELEVATOR EN](#)
- [FL POWER SUPPLY EN](#)
- [FL 72H SAMPLE SER EN](#)
- [PO OMNIMATE EN](#)
- [PO OMNIMATE EN](#)

White paper surface mount technology [Download Whitepaper](#)

LSF-SMT 3.81/10/135 1.5SN BK RL

Weidmüller Interfaces GmbH & Co. KG

Postfach 3030

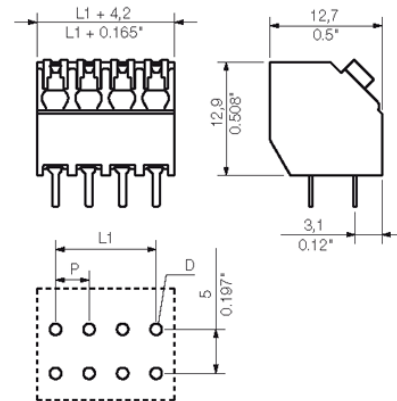
32760 Detmold

Tel. +49 5231 14-0

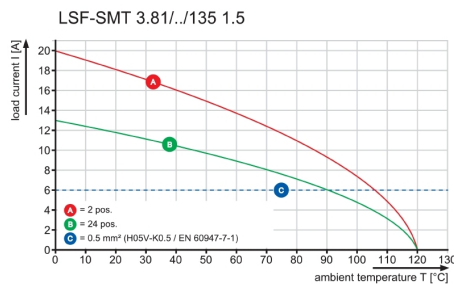
Fax. +49 5231 14-2083

Drawings

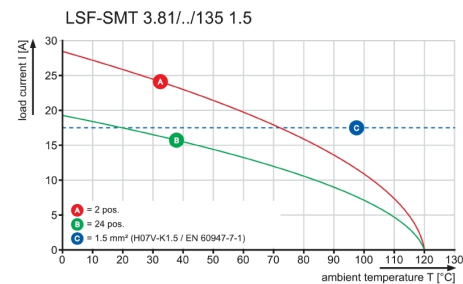
Dimensional drawing info@weidmueller.com



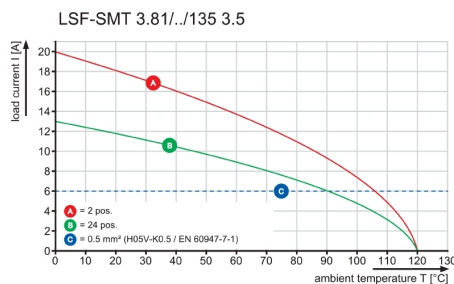
Graph



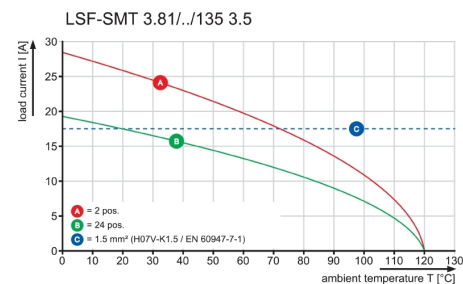
Graph



Graph



Graph



LSF-SMT 3.81/10/135 1.5SN BK RL

Weidmüller Interfaces GmbH & Co. KG

Postfach 3030

32760 Detmold

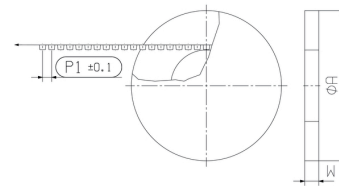
Tel. +49 5231 14-0

Fax. +49 5231 14-2083

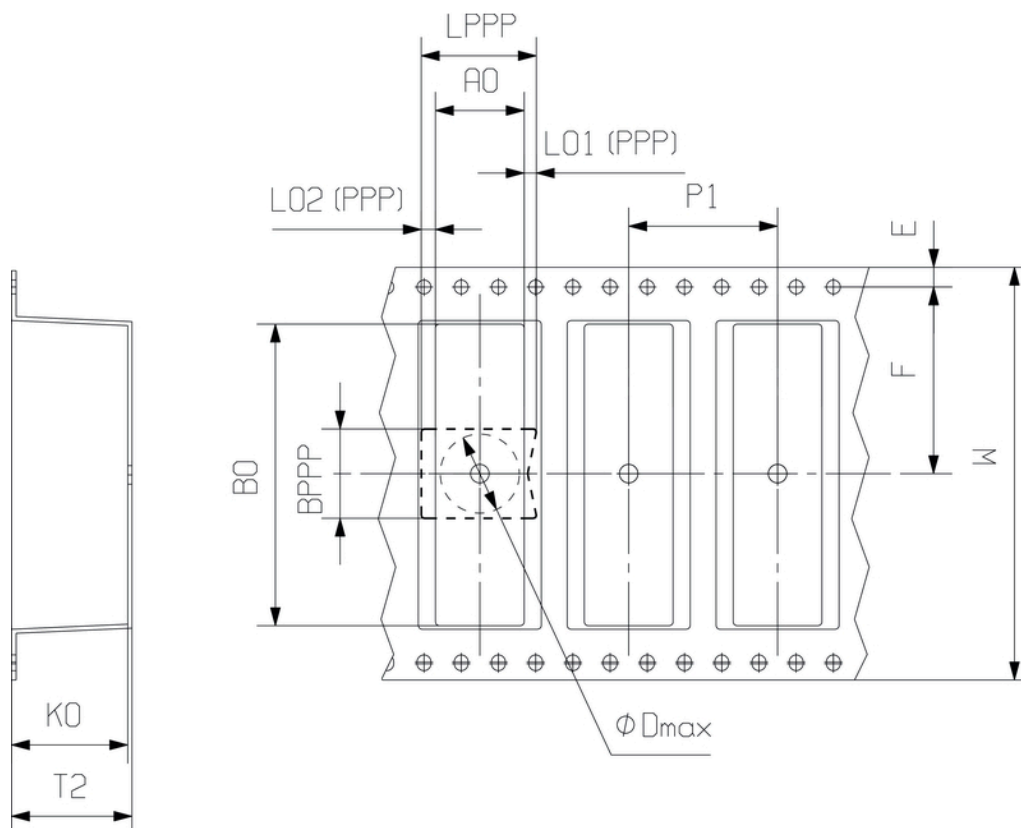
info@weidmueller.com

Drawings

Dimensional drawing



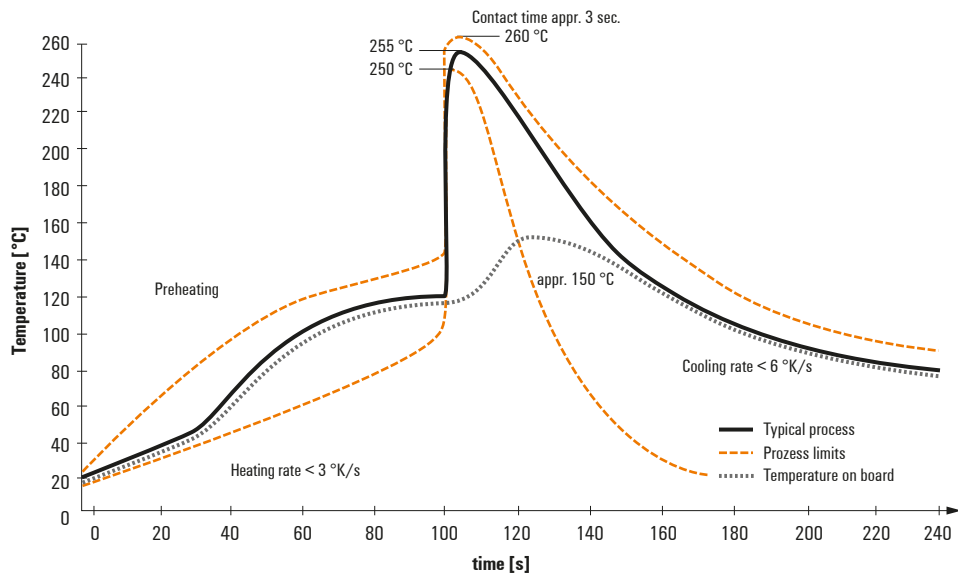
Dimensional drawing



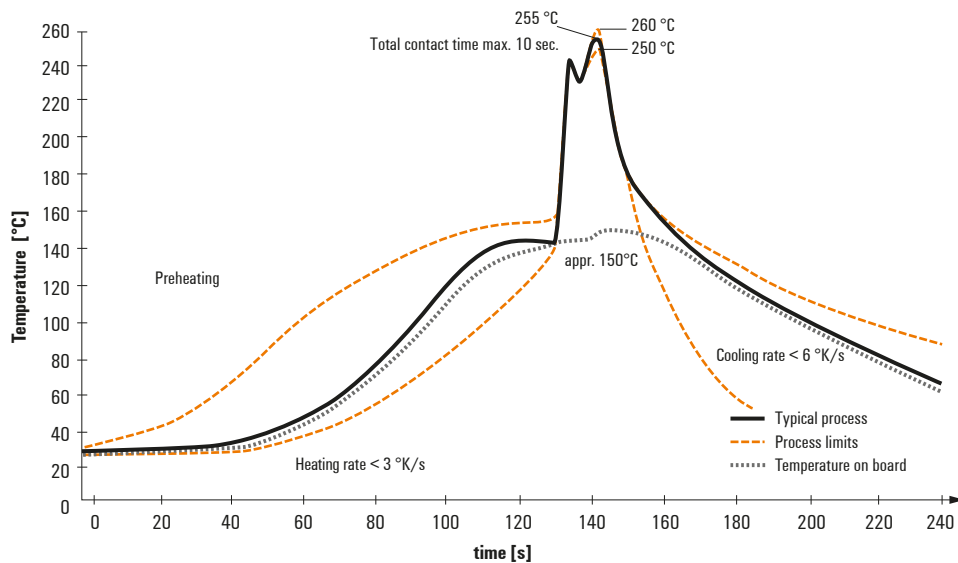
Recommended wave soldering profiles

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 16
D-32758 Detmold
Germany
Fon: +49 5231 14-0
Fax: +49 5231 14-292083
www.weidmueller.com

Single Wave:



Double Wave:



Wave soldering profiles

Wired connection elements should be processed in accordance with the DIN EN 61760-1 standard. We have included two recommendations for practical wave soldering profiles, with which Weidmüller PCB terminals and connectors are qualified.

When choosing a suitable profile for your application, the following factors also need to be considered:

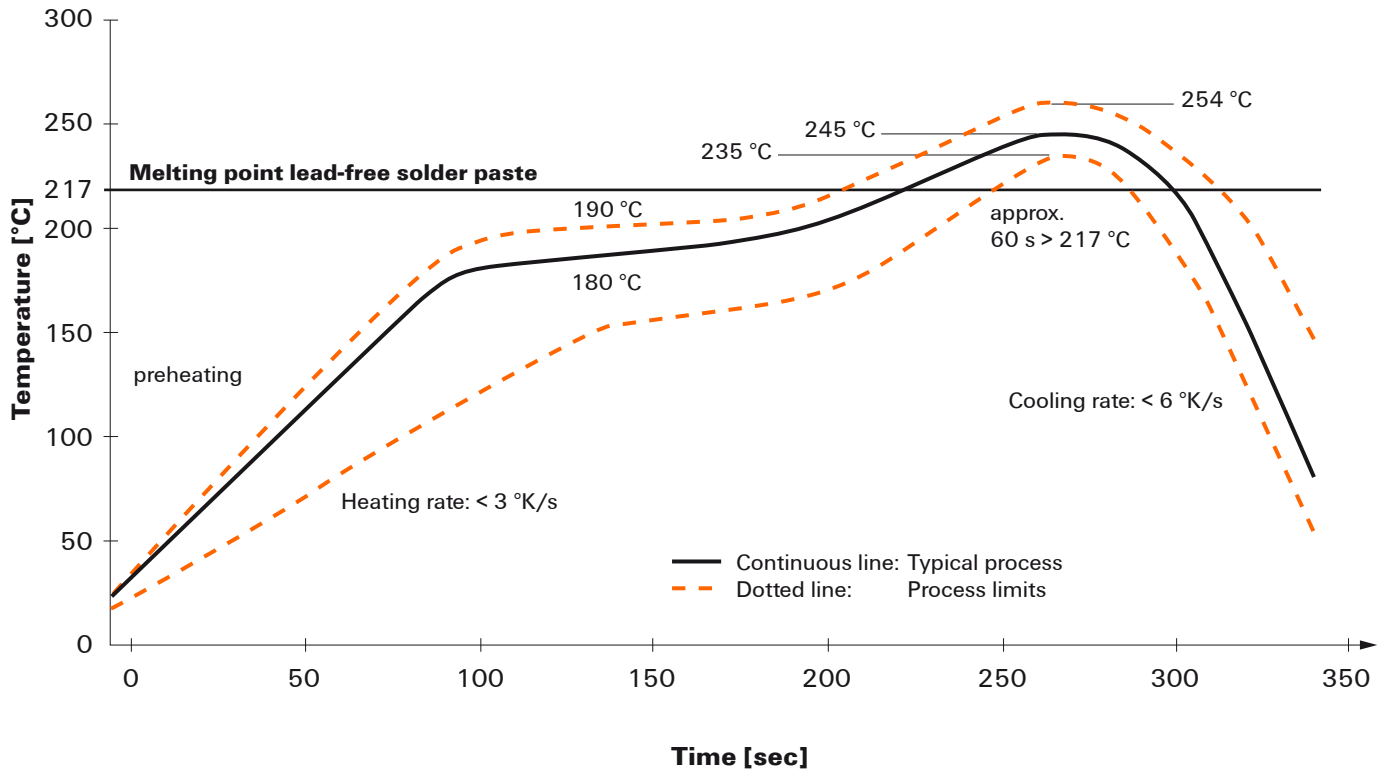
- PCB thickness
- Proportion of Cu in the layers
- Single/double-sided assembly
- Product range
- Heating and cooling rates

The single and double wave profiles each indicate the recommended operating range, including the maximum soldering temperature of 260°C. In practice, the maximum soldering temperature is quite often well below the above maximum profile.

We reserve the right to make technical changes.

Recommended reflow soldering profile

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 16
D-32758 Detmold
Germany
Fon: +49 5231 14-0
Fax: +49 5231 14-292083
www.weidmueller.com



Reflow soldering profile

The perfect soldering profile for SMT Surface Mount Technology is one the most exiting question in SMT production. But there are more than one correct answer: The diagram of temperature-on-time is related to processing features of solder paste and to maximum load of components.

We have to consider the following parameters:

- Time for pre heating
- Maximum temperature
- Time above melting point
- Time for cooling
- Maximum heating rate
- Maximum cooling rate

We recommend a typical solder profile with associated process limits. With preheating components and board are prepared smoothly for the solder phase. Heating rate is typically $\leq +3\text{K/s}$. In parallel the solder paste is 'activated'. The time above melting point of 217°C the paste gets liquid and components and boards begin to connect. The maximum temperature of 245°C to 254°C should stay between 10 and 40 seconds. In the cooling phase at $\geq -6\text{K/s}$ solder is cured. Board and components cool down while avoiding cold cracks.